

DATA TECHNOLOGY CORPORATION

METER LAB.

1625

**preliminary  
instruction manual  
340A, 342 and 343  
digital panel meter**





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## **CONTENTS**

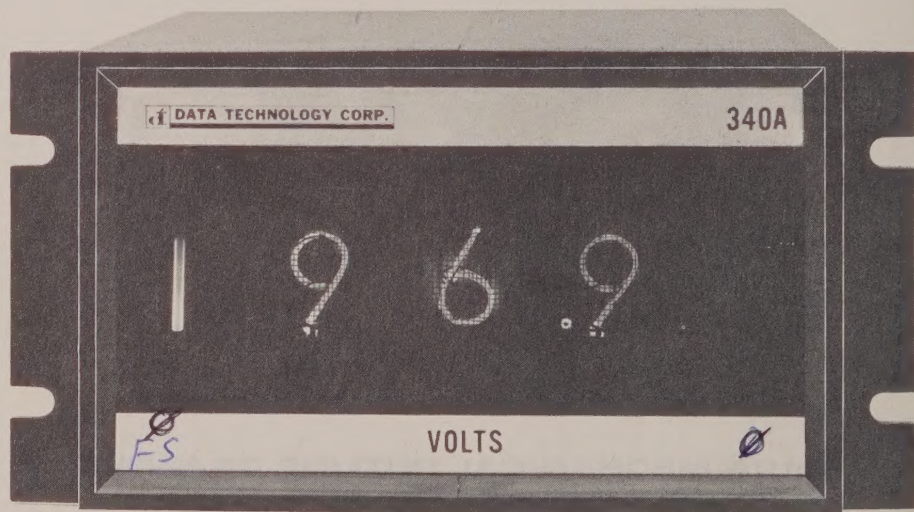
**SECTION I 340A**

**SECTION II 342**

**SECTION III 343**

**340A MECHANICAL OUTLINE DRAWING**

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APJ

adj.  
ZERO

Frontispiece

# SECTION I 340A

NO POL.  
CHANGING

## 340A SPECIFICATIONS

### INPUT CHARACTERISTICS

Selection of any one of 6 DC Voltage Ranges:

| Range<br>(Full Scale) | Resolution  | Input<br>Impedance | Maximum<br>Voltage |
|-----------------------|-------------|--------------------|--------------------|
| 19.99 mV              | 10 $\mu$ V  | > 100 M $\Omega$   | 250 V              |
| 199.9 mV              | 100 $\mu$ V | > 100 M $\Omega$   | 250 V              |
| 1.999 V               | 1 mV        | > 1000 M $\Omega$  | 250 V              |
| 19.99 V               | 10 mV       | 10 M $\Omega$      | 1 KV               |
| 199.9 V               | 100 mV      | 10 M $\Omega$      | 1 KV               |
| 999 V                 | 1 V         | 10 M $\Omega$      | 1 KV               |

Selection of any one of 7 DC Current Ranges:

| Range<br>(Full Scale) | Resolution  | Maximum Full<br>Scale Voltage |
|-----------------------|-------------|-------------------------------|
| 199.9 nA              | 100 pA      | 200 mV                        |
| 1.999 $\mu$ A         | 1 nA        | 200 mV                        |
| 19.99 $\mu$ A         | 10 nA       | 200 mV                        |
| 199.9 $\mu$ A         | 1 $\mu$ A   | 200 mV                        |
| 19.99 mA              | 10 $\mu$ A  | 200 mV                        |
| 199.9 mA              | 100 $\mu$ A | 200 mV                        |

Signal Input Configuration:

High, Low Inputs located on rear.

Selection of any one of 5 Ohm Ranges:

| Range<br>(Full Scale) | Resolution   | Output<br>Current | Maximum<br>Open Circuit<br>Voltage |
|-----------------------|--------------|-------------------|------------------------------------|
| 199.9 $\Omega$        | 0.1 $\Omega$ | 10 mA             | > 5 V                              |
| 1.999 K $\Omega$      | 1 $\Omega$   | 1 mA              | > 5 V                              |
| 19.99 K $\Omega$      | 10 $\Omega$  | 100 $\mu$ A       | > 5 V                              |
| 199.9 K $\Omega$      | 100 $\Omega$ | 10 $\mu$ A        | > 5 V                              |
| 1.999 M $\Omega$      | 1 K $\Omega$ | 1 $\mu$ A         | > 5 V                              |

### ACCURACY

| Functions &<br>Ranges         | 23 $\pm$ 1 $^{\circ}$ C<br>7 hrs. |            | 10-40 $^{\circ}$ C<br>60 days |            |
|-------------------------------|-----------------------------------|------------|-------------------------------|------------|
|                               | $\pm$ % rdg.                      | $\pm$ % FS | $\pm$ % rdg.                  | $\pm$ % FS |
| DC: 2,20,200 V                | 0.1                               | .05        | 0.1                           | 0.1        |
| DC: 200 mV                    | 0.1                               | .15        | 0.1                           | 0.25       |
| DC: 20 mV                     | 0.1                               | 0.2        | 0.1                           | 0.4        |
| DC: 100 V                     | 0.1                               | 0.1        | 0.1                           | 0.2        |
| DC Current                    |                                   | .25        |                               | 0.5        |
| Ohms                          |                                   |            |                               |            |
| 200 $\Omega$ - 200 K $\Omega$ | 0.1                               | 0.1        | 0.3                           | 0.2        |
| 2 M $\Omega$                  | 0.2                               | 0.2        | 0.5                           | 0.5        |

## 340A SPECIFICATIONS (Cont.)

### SPEED

Reading Rate: 5 readings/second, nominal  
Conversion Time: 10 msec., maximum

### OUTPUT CHARACTERISTICS

Visual: Display storage includes 3 digital readout indicators with one overrange digit, decimal point, and flashing polarity indication when input configuration is the wrong polarity.

Overrange Indication: Flashing overrange indication when the input has exceeded the full scale value of the selected range.

Electrical: Digital Outputs and Remote Control (optional).

#### OUTPUTS & CONTROLS

BCD 1248  
3 Decades

Logic "1"  
Logic "0"

Most Significant Decade

Logic "1"  
Logic "0"

overrange

Wrong Polarity

Remote Control Signal

Print Command

#### CHARACTERISTICS

T<sup>2</sup>L micrologic

> 2.4 V  
< 0.4 V

Sink for 4 mA

+1 V min.  
< .25 V max.

+5 V nominal  
+1 V min.

Sink to +0.25 V max.  
1 mA nominal

Transition from +5 V (nominal)  
to 0.4 V maximum during  
conversion time

### CONTROLS

Zero and full scale calibration adjustments are made available on the front panel by removing the snap-on identification labels.

### INPUT POWER

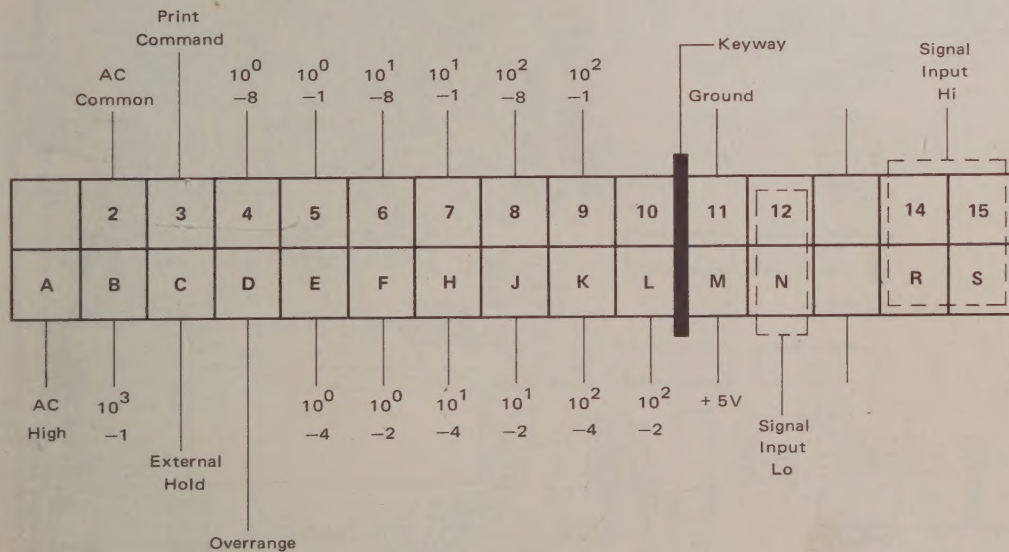
105 to 125 V, 50 to 60 Hz, less than 15 watts.

### PHYSICAL CHARACTERISTICS

Dimensions: 2.5" H x 5.0" W x 7.5" D  
Color: Black; other colors available on request  
Weight: Approximately 15 ounces

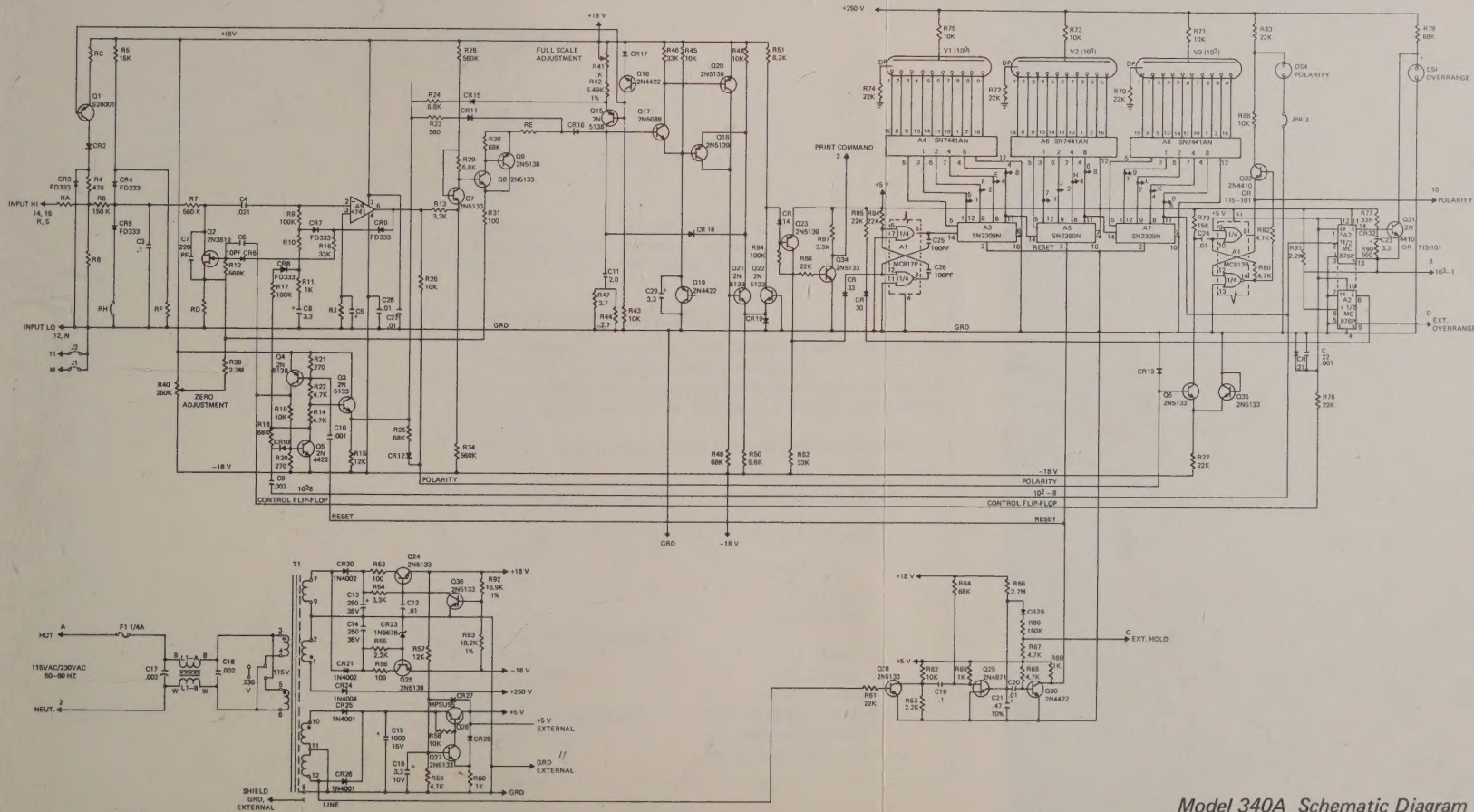
### ENVIRONMENT

Temperature: Operating range 0°C to +55°C  
Humidity: 80% maximum relative humidity



340A Pin Configuration





Model 340A Schematic Diagram

100

.5%

$$\begin{array}{r} 100.0 \\ .5 \\ \hline 100.5 \end{array} + \begin{array}{r} 100 \times \\ .005 \\ \hline .500 \end{array}$$

99.5

## SECTION II 342

### 342 SPECIFICATIONS

#### INPUT CHARACTERISTICS

Selection of any one of 3 AC Voltage Ranges:

| Range<br>(Full Scale) | Resolution | Input<br>Impedance |
|-----------------------|------------|--------------------|
| 19.99 Vrms            | 10 mV      | 1 M $\Omega$       |
| 199.9 Vrms            | 100 mV     | 5 M $\Omega$       |
| 750 Vrms              | 1 V        | 5 M $\Omega$       |

#### FREQUENCY RANGE

45 Hz to 1 KHz useable to 10 KHz

Signal Input Configuration:

High, Low inputs located on rear connector.

#### ACCURACY

| Range      | 23° ±1°C<br>7 hrs. |       | 10–40°C<br>60 days |       |
|------------|--------------------|-------|--------------------|-------|
|            | ±% rdg,            | ±% FS | ±% rdg,            | ±% FS |
| 19.99 VRms | 0.5                | 0.2   | 0.5                | 0.2   |
| 199.9 VRms | 0.2                | 0.2   | 0.2                | 0.2   |
| 750 VRms   | 0.2                | 0.2   | 0.2                | 0.2   |

#### SPEED

|                  |                              |
|------------------|------------------------------|
| Reading Rate:    | 5 readings/second, nominal   |
| Conversion Time: | 10 msec., maximum            |
| Response Time:   | 10 seconds to rated accuracy |

#### OUTPUT CHARACTERISTICS

Visual: Display Storage includes 3 digital readout indicators with one overrange digit and decimal point.

Overrange Indication: Flashing overrange indication when the input has exceeded the full scale value of the selected range.

Electrical: Digital Outputs and Remote Control (Optional)

#### OUTPUTS & CONTROLS

#### CHARACTERISTICS

|                         |                                                  |
|-------------------------|--------------------------------------------------|
| BCD 1248                | T <sup>2</sup> L Micrologic                      |
| 3 Decades               |                                                  |
| Logic "1"               | > 2.4 V                                          |
| Logic "0"               | < 0.4 V                                          |
|                         | Sink for 4 mA                                    |
| Most Significant Decade |                                                  |
| Logic "1"               | +1 V min.                                        |
| Logic "0"               | < .25 V                                          |
| Overrange               | +5 V nominal                                     |
| Remote Control Signal   | Sink to GND, 1 mA max.                           |
| Print Command           | Transition from 0 V to +5 V at end of conversion |

## 342 SPECIFICATIONS (Cont.)

### CONTROLS

Zero and full scale calibration adjustments are made available on the front panel by removing the snap-on identification labels.

### INPUT POWER

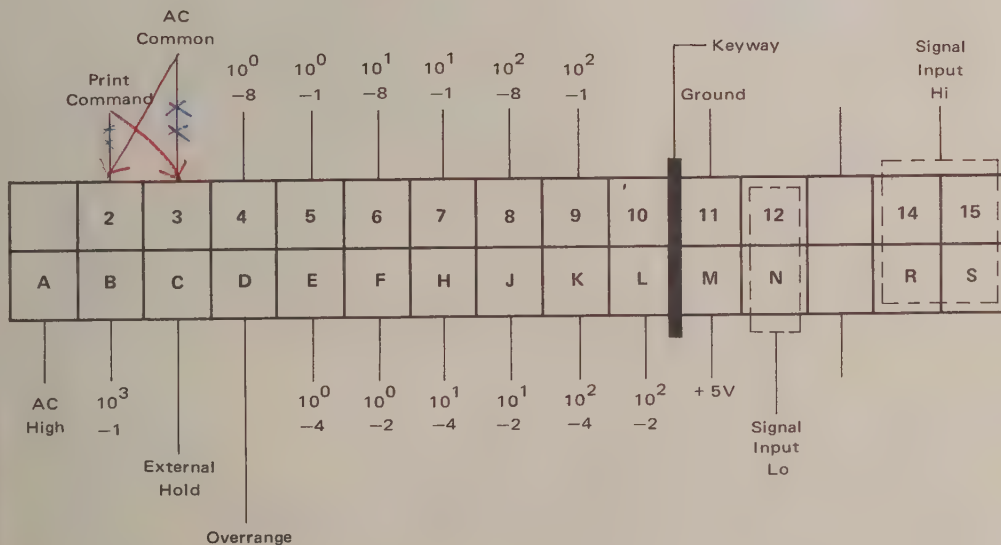
105 to 125 V, 50 to 60 Hz, less than 15 watts

### PHYSICAL CHARACTERISTICS

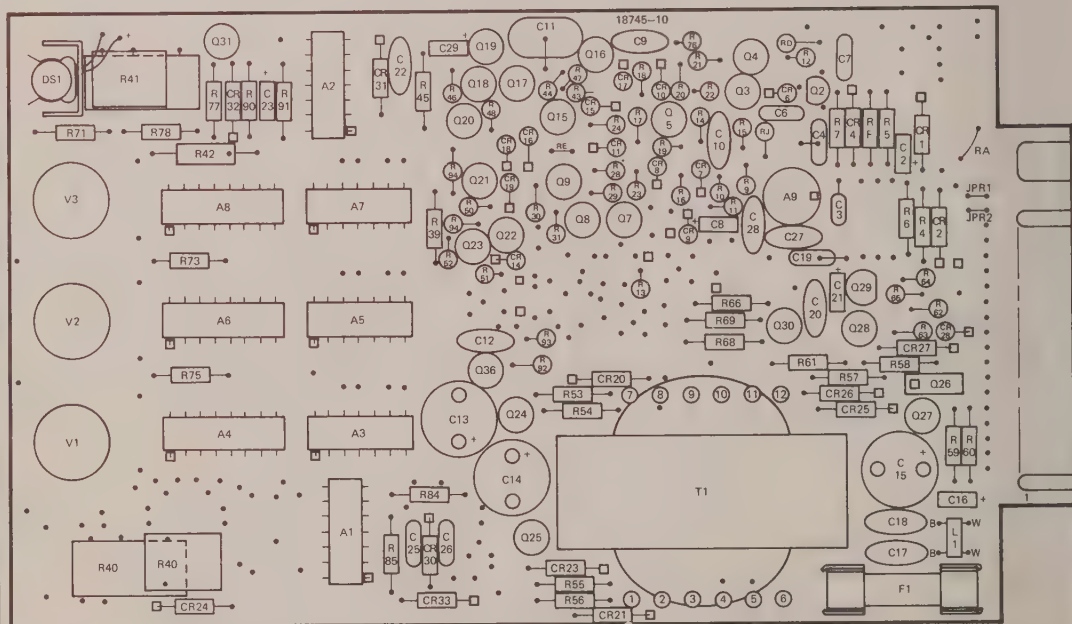
Dimensions: 2.5" H x 5.0" W x 7.5" D  
Color: Black; other colors available on request  
Weight: Approximately 25 ounces

### ENVIRONMENT

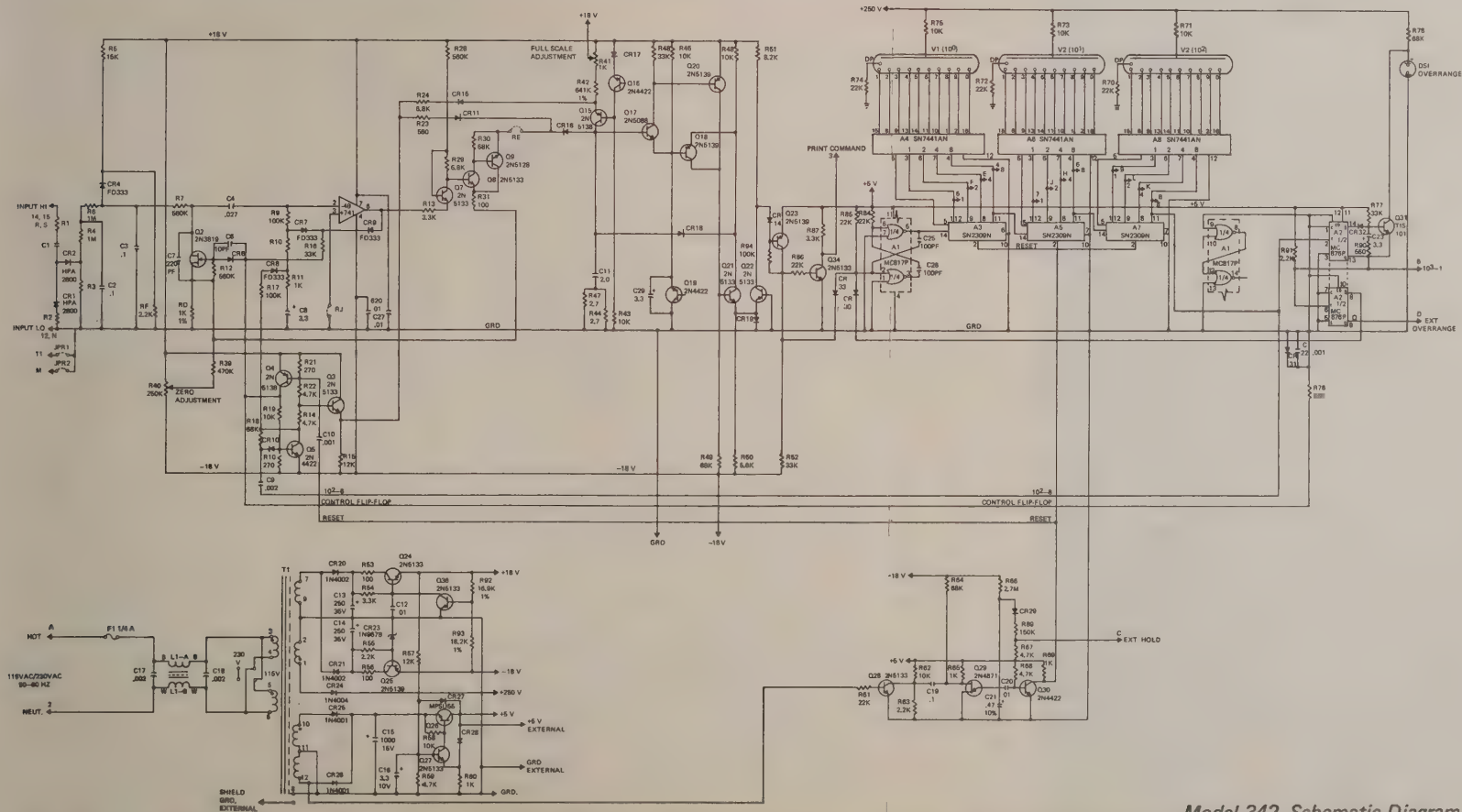
Temperature: Operating range 0°C to +55°C  
Humidity: 80% maximum relative humidity



342 Pin Configuration



*Model 342 Mother Board Assembly*



Model 342 Schematic Diagram



## SECTION III 343

### 343 SPECIFICATIONS

#### INPUT CHARACTERISTICS

Selection of any one of 5 DC Voltage Ranges:

| Range<br>(Full Scale) | Resolution  | Input<br>Impedance          | Maximum<br>Voltage |
|-----------------------|-------------|-----------------------------|--------------------|
| 19.99 mV              | 10 $\mu$ V  | $\geq 100 \text{ M}\Omega$  | 250 V              |
| 199.9 mV              | 100 $\mu$ V | $\geq 100 \text{ M}\Omega$  | 250 V              |
| 1.999 V               | 1 mV        | $\geq 1000 \text{ M}\Omega$ | 250 V              |
| 19.99 V               | 10 mV       | 10 $\text{M}\Omega$         | 1 KV               |
| 199.9 V               | 100 mV      | 10 $\text{M}\Omega$         | 1 KV               |
| 999 V                 | 1 V         | 10 $\text{M}\Omega$         | 1 KV               |

Selection of any one of 7 DC Current Ranges:

| Range<br>(Full Scale) | Resolution  | Maximum Full<br>Scale Voltage |
|-----------------------|-------------|-------------------------------|
| 199.9 nA              | 100 pA      | 200 mV                        |
| 1.999 $\mu$ A         | 1 nA        | 200 mV                        |
| 19.99 $\mu$ A         | 10 nA       | 200 mV                        |
| 199.9 $\mu$ A         | 100 nA      | 200 mV                        |
| 1.999 mA              | 1 $\mu$ A   | 200 mV                        |
| 19.99 mA              | 10 $\mu$ A  | 200 mV                        |
| 199.9 mA              | 100 $\mu$ A | 200 mV                        |

Signal Input Configuration:

High, Low Inputs located on rear connector.

#### ACCURACY

| Functions and<br>Ranges | 23 $\pm 1^\circ\text{C}$<br>7 hrs. |            | 10–40 $^\circ\text{C}$<br>60 days |            |
|-------------------------|------------------------------------|------------|-----------------------------------|------------|
|                         | $\pm\%$ rdg.                       | $\pm\%$ FS | $\pm\%$ rdg.                      | $\pm\%$ FS |
| DC: 2, 20, 200 V        | 0.1                                | .05        | 0.1                               | 0.1        |
| DC: 200 mV              | 0.1                                | .15        | 0.1                               | 0.25       |
| DC: 20 mV               | 0.1                                | 0.2        | 0.1                               | 0.4        |
| DC: 1000 V              | 0.1                                | 0.1        | 0.1                               | 0.2        |
| DC Current              |                                    | .25        |                                   | 0.5        |

#### SPEED

Reading Rate: 5 readings/second, nominal  
Conversion Time: 10 msec., maximum

#### OUTPUT CHARACTERISTICS

Visual: Display storage includes 3 digital readout indicators with one overrange digit, decimal point, and (+) (–) illuminated automatic polarity indication.

Overrange Indication: Flashing overrange indication when the input has exceeded the full scale value of the selected range.

Electrical: Digital Outputs and Remote Control (Optional)

### 343 SPECIFICATIONS (Cont.)

#### OUTPUTS & CONTROLS

BCD 1248

3 Decades

Logic "1"

Logic "0"

Most Significant Decade

Logic "1"

Logic "0"

Overrange

Polarity

Positive

Negative

Remote Control Signal

Print Command

#### CONTROLS

Zero and full scale calibration adjustments are made available on the front panel by removing the snap-on identification labels.

#### INPUT POWER

105 to 125 V, 50 to 60 Hz, less than 15 watts.

#### CHARACTERISTICS

T<sup>2</sup>L Micrologic

>2.4 V

<0.4 V

Sink for 4 mA

+1 V min.

0.25 V max.

+5 V nominal

(+) +0.25 V max.

(-) +1 V min.

Sink to +0.25 V max.

1 mA nominal

Transition from +5 V nominal to +0.4 max. during conversion time.

#### PHYSICAL CHARACTERISTICS

Dimensions: 2.5" H x 5.0" W x 7.5" D

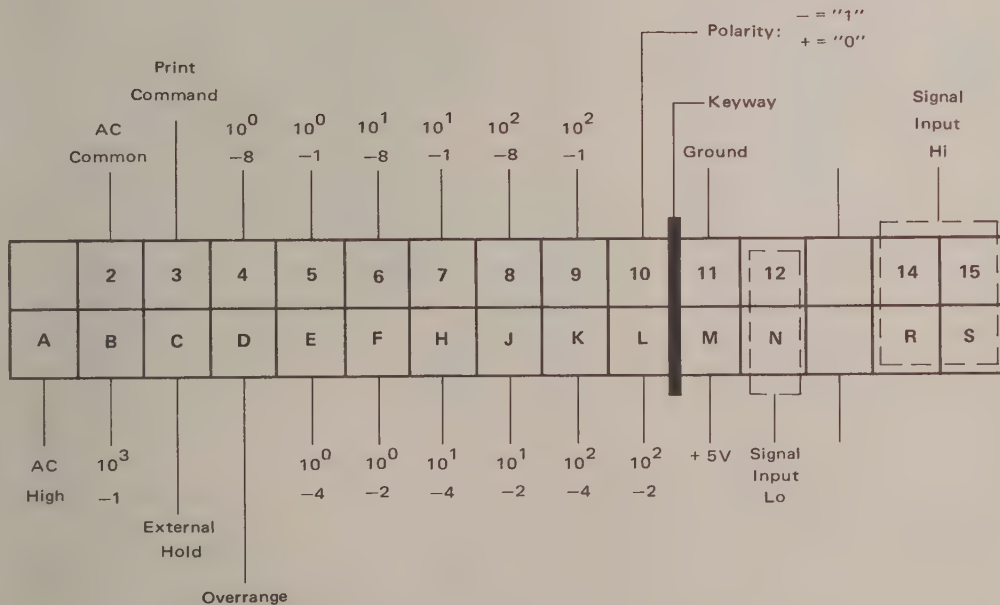
Color: Black; other colors available on request

Weight: Approximately 25 ounces

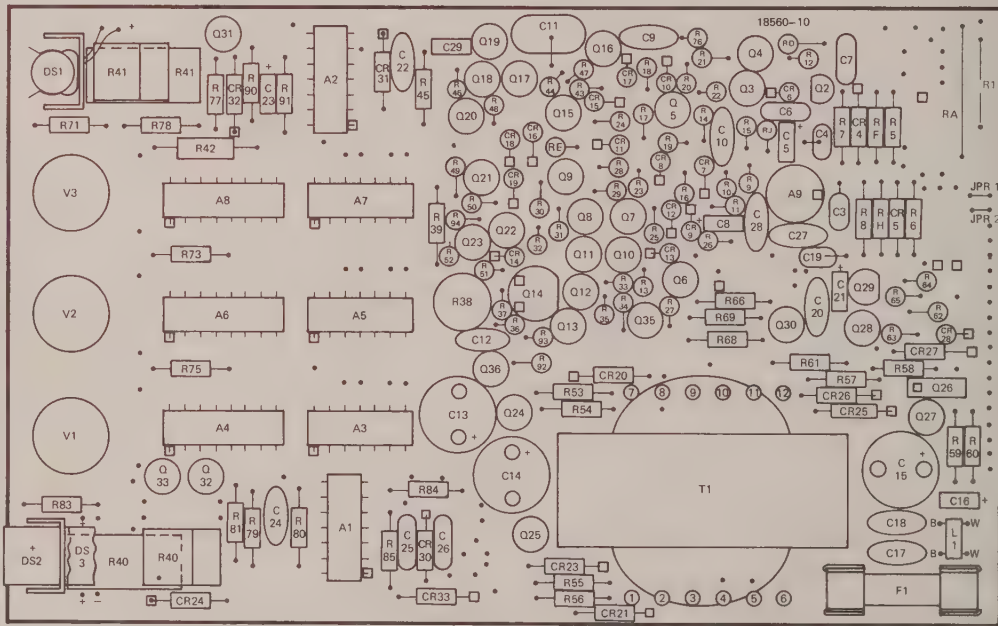
#### ENVIRONMENT

Temperature: Operating Range 0°C to +55°C

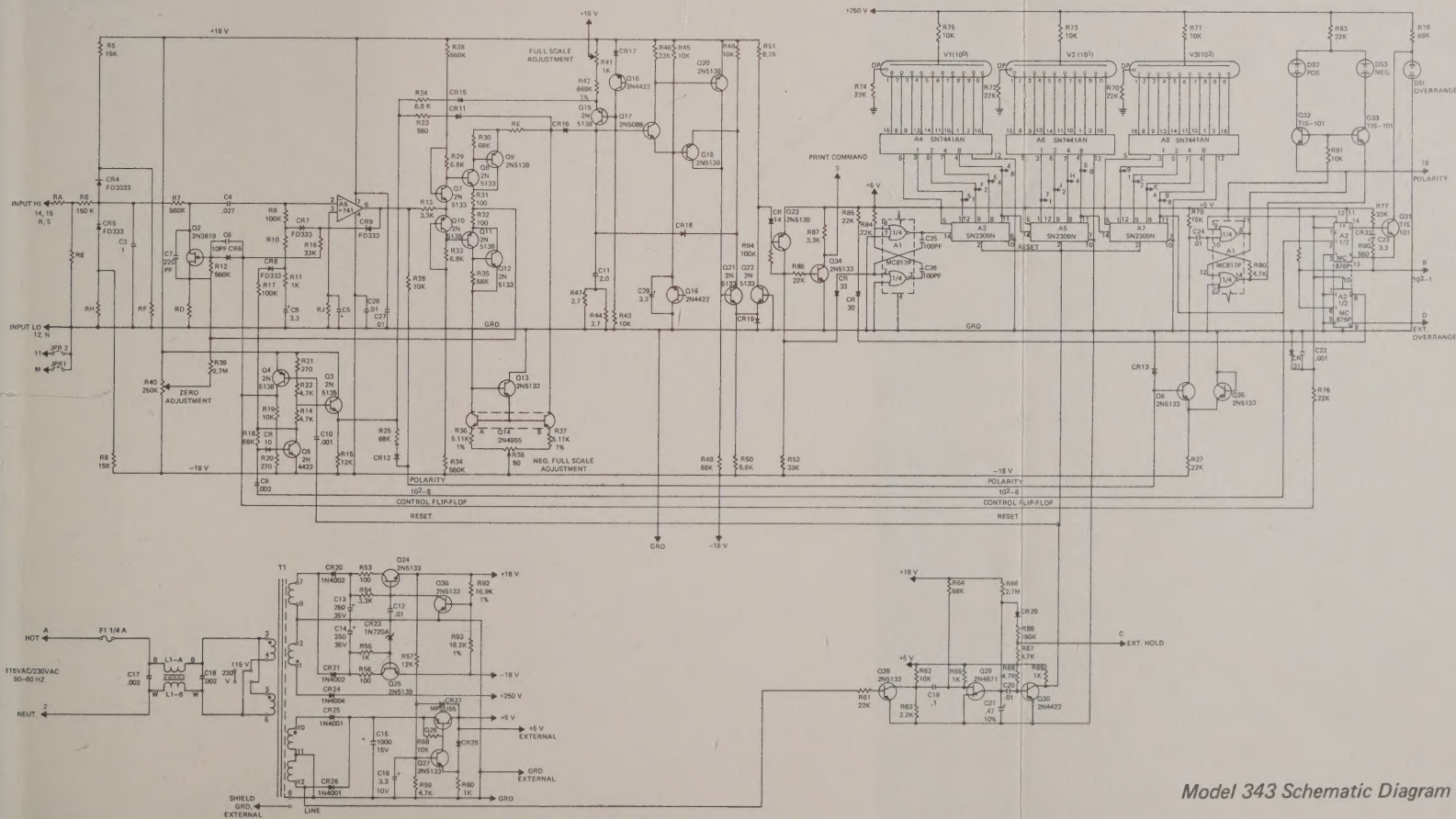
Humidity: 80% maximum relative humidity



343 Pin Configuration

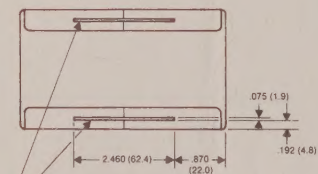


*Model 343 Mother Board Assembly*



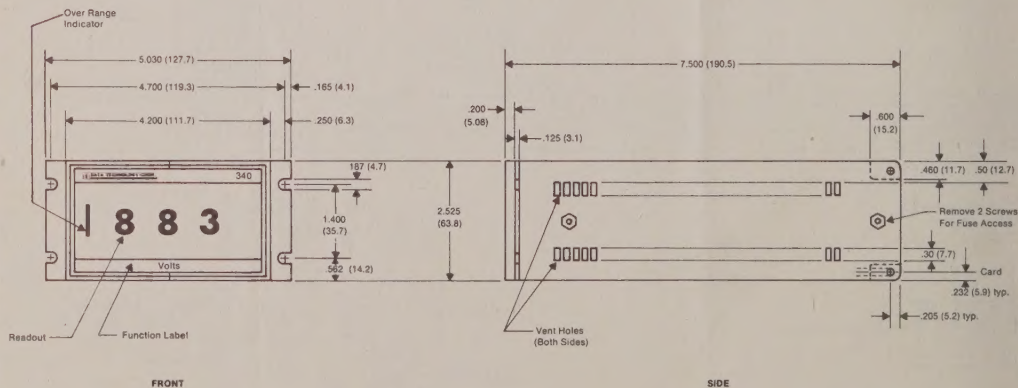
Model 343 Schematic Diagram

REAR



Printed Contacts On .156 Centers  
(Typical Mating Connectors — Cinch No. 251-15-30-160)  
Viking No. 2RH 15/1 AN 3

All dimensions in inches and (millimeters)



340A Mechanical Outline Drawing



[www.manualsplus.com](http://www.manualsplus.com)



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